Wireless Services Weekly

New World Record for Wi-Fi Distance

By Doug Chandler

Team PAD, the world record holders for the longest distance for an unamplified Wi-Fi link (55.1 miles at 300mw), blasted through their own year old record at around 11:00 am on Saturday at the Defcon Wi-Fi Shootout. The team shot their signal a distance of 125 miles from outside Las Vegas (Mt. Potosi), Nevada to a location near St. George, Utah (Utah Hill), winning them a new record in the "unamplified" category at the shootout. This possibly qualifies them for a new Guiness record as well.

They used the zCom 325hp+ PCMCIA cards running at a built-in power of 300 mw on each end of the link. The cards were connected to one 12 foot and one 10 foot diameter satellite dish on each side of the link. The computers they used were running Linux. An un-amplified connection at 11 Mbps was attained and kept up for 3 hours. During this time 11,000 successful pings were made. Both ends of the link were using SSH and logged into the other end. VNC was also used successfully WITHOUT frames being dropped. Ping times varied from 0.01 ms to 400 ms, seeming to average around 10 ms. The connection had an astounding signal strength of -37 dBm, bottoming out at around -50 dBm throughout the 3 hours. The noise levels were around -84 dBm.

So what's Wi-Fi, and what's the big deal about 125 miles? Wi-Fi is based on the IEEE 802.11 specification for Wireless Local Area Networks (WLAN). To put it in perspective, your cell phone transmits at or less than 600 milliwatts (just over half a watt), which is perfectly safe to have transmitting right next to your head. Team PAD was transmitting at half that power over 125 miles! Most applications of 802.11 are designed to give wireless coverage for your conference room, or across the street with directional antennas. OK, OK, you have to be a wireless geek to think that's cool, but guess who gets to write the article?

More Funding for Mobile Data

By Doug Chandler

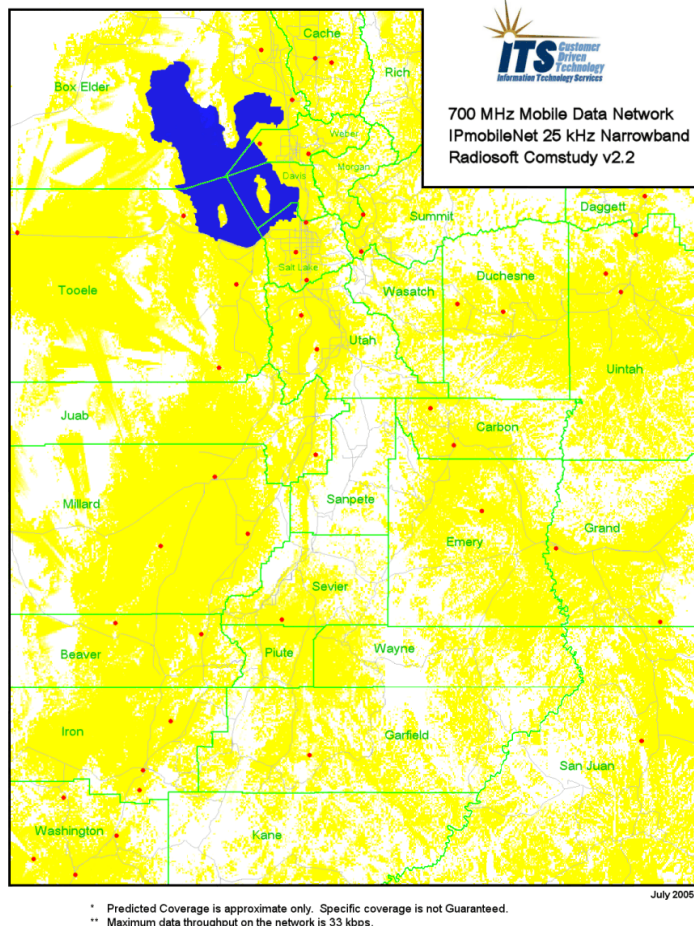We just received final approval for an additional $125,000 to purchase infrastructure in support of the statewide mobile data network. The grant originated from the Federal Emergency Management Agency (FEMA), through the Chemical Stockpile Emergency Preparedness Program (CSEPP). As a requirement of the grant, the new infrastructure will directly benefit Tooele, Utah, and Salt Lake Counties. The availability of grants for infrastructure has been the main reason we have been able to keep user fees as low as they are; $15/mo -unlimited use.

The coverage map above and to the right, illustrates the predicted coverage that will be available after the proposed 44 sites are completed. 25 sites are completed and operational now. Eight of the 25 will be converted from their current 450MHz to the new 700MHz spectrum.

700 MHz Mobile Data Network
IPmobileNet 25 kHz Narrowband
Radiosoft Comstudy v2.2

* Predicted Coverage is approximate only. Specific coverage is not Guaranteed.
** Maximum data throughput on the network is 33 kbps.

July 2005

State CIO Report to U.T.C.

By Doug Chandler

Back on July 12. Our new State Chief Information Officer gave a report to the Utah Technology Committee, on the progress of last year's House Bill 109. HB109 (very basically) brings state Information Technology (IT) personnel into a new Department of Technology Services. Currently, the Division of Information Technology Services (ITS) falls under the Department of Administrative Services (DAS). Larger Departments have their own, separate IT staffs. As an IT-type person, I find it rather exciting that information technology will now have a seat at the Governor' cabinet level.

Another aspect of HB109, is that the state CIO will serve as the Executive Director of the new Department of Technology Services. You might imagine the scope and weight of the work to be done in coordinating and combining information technology at that level of political, financial, and downright emotional interaction. By the end of this month, all IT personnel being transferred over to the new Department, will be identified. I appreciated finding not only the written minutes of the entire meeting, but also an audio transcript of Stephen Fletcher's report to the committee. If you have any interest in the consolidation, and are interested in the CIO's perspective, I highly recommend listening to the presentation.

Sanpete County Partners With State

By Doug Chandler

Last Wednesday, I had the privilege to head south to meet with several representatives from the Sanpete Sheriff's Office. It's always good to meet with my friends from way back in the days when I was a field tech. Barry Bradley, Communications Tech, helped me install the first radio repeater on Horse Shoe Ridge for the (then) new Gunnison Prison.

Kevin Holman, Sanpete County's Emergency Management Coordinator, hosted the meeting. Phil Bates (IT Director of Public Safety) and I outlined where the state is at with the OmniLink project, mobile data, and 800MHz conventional radio deployment. More than receptive, Sanpete County is supportive, and even eager to connect to the OmniLink system, and to have mobile data available in their region ASAP. We also spoke of a new shared communications site at Horseshoe Ridge.

Console Training

By Doug Chandler

Michael Bright, our Ogden Radio Tech, just returned from a week-long training course in Chicago. Motorola has a world-renowned training facility in Schaumburg (just outside Chicago). The Centracom Series Gold Elite console training is a fast-paced, focused course which brought a great deal of knowledge and skills to Michael's repertoire.

We maintain several dispatch console systems around the state. Each of our outlying radio techs maintains at least one, but Michael is now maintaining three major 911 dispatch centers for northern Utah. If Michael can be of any assistance to you or your agency, please give him a call: 801-965-4878.

Calendar

UWIN Governance Board
Friday August 12, 2005
10:00 am - noon
State Office Building Room 5112

UCAN Meeting
Tuesday September 20, 2005
2:00 p.m. - 4:00 p.m.
Location: VECC
5360 South 5885 West
Salt Lake City

911 Committee
Thursday August 18, 2005
10:00am - Noon
Rampton Complex
4501 South 2700 West
UHP Large Conference Room

Utah Sheriff's Association 10th Annual Conference and Exposition
St. George Dixie Center
September 11-13
Conference Link